

Listing of the Claims

1. (Currently Amended) A data processing unit (3) for registering a first image (A1) and a second image (A2) of an object (2), the data processing unit (3) being set up to:
 - segment the images (A1, A2) automatically into various object constituents (a, b, c);
 - register only those image areas (B1, B2) of selected object constituents (b) which are relevant to a predetermined task.

2. (Currently Amended) A data processing unit (3) for registering a first image (A1) and a second image (A2) of an object (2), in particular a data processing unit (3) as claimed in claim 1, which is set up to:
 - segment the images (A1, A2) automatically into various object constituents (a, b, c);
 - register the image areas (B1, B2) of various object constituents (a, b, c) using individually assigned registration methods.

3. (Currently Amended) A data processing unit as claimed in claim 1-~~or~~ 2, ~~characterized in that~~ wherein the segmented object constituents (a, b, c) are automatically classified.

4. (Currently Amended) A data processing unit as claimed in claim 1-~~or~~ 2, ~~characterized in that~~ wherein a linear registration is performed on several resolution levels, rigid bodies being registered on a coarse grid followed by affine registration on a finer grid.

5. (Currently Amended) A data processing unit as claimed in claim 1-~~or~~ 2, ~~characterized in that~~ wherein the first image (A1) and/or the second image (A2) are/is (a) two- or three-dimensional computer tomogram(s), in particular an X-ray photograph or a magnetic resonance image.

6. (Currently Amended) A data processing unit as claimed in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the object is the chest (2) of a patient, the lungs (b) being the object constituent relevant to a tumor diagnosis.
7. (Currently Amended) A data processing unit as claimed in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the segmentation is performed using a watershed transformation.
8. (Currently Amended) An examination apparatus, comprising:
- an imaging device (1) for producing images (A1, A2) of an object (2);
 - a data processing unit (3) as claimed in ~~any one of the claims 1 to 7~~, coupled to the imaging device (1).
9. (Currently Amended) A method for registering a first image (A1) and a second image (A2) of an object (2), comprising the following steps:
- automatic segmentation of the images (A1, A2) into various object constituents (a, b, c);
 - registration of the image areas (B1, B2) of selected object constituents (b) relevant to a predetermined task.
10. (Currently Amended) A method for registering a first image (A1) and a second image (A2) of an object (2), comprising the following steps:
- automatic segmentation of the images (A1, A2) into various object constituents (a, b, c);
 - registration of the image areas (B1, B2) of various object constituents (a, b, c) using individually assigned registration methods.